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ABSTRACT

This report is written for local educators who are responsible for the administration of the Michigan Educational Assessment Program (MEAP) tests and for other people who are generally interested in the purposes and methodology of MEAP. The 1975-76 assessment will report 19 variables at the student, classroom, school or district levels, in the areas of (a) Human Resources, (b) District Financial Resources, (c) Percent Minority, (d) Dropout Rate, (e) Student Achievement, and (f) Size. The minimal performance objectives and MEAP tests were mainly developed by Michigan teachers and curriculum specialists. In addition to every-pupil testing of fourth and seventh graders in reading and mathematics, the 1975-76 program will continue the first grade pilot testing begun in 1974-75 in a selected sample of schools. The introduction of a volunteer grade 10 limited pilot project is the greatest change from previous years' assessment programs. This report also presents general information on the procedural aspects of the assessment program which will be found in greater detail in coordinator, administrator, and interpretive manuals which will accompany the MEAP testing materials and resultant data. (Author/RC)

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OBJECTIVES & PROCEDURES

1975-76 Michigan Educational Assessment Program

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OBJECTIVES AND PROCEDURES

The First Report of the 1975-76 Michigan
Educational Assessment Program

Prepared by the

Michigan Educational Assessment Program

Research, Evaluation and Assessment Services

July, 1975

FOREWORD

The Michigan Educational Assessment Program (MEAP) was initiated by the State Board of Education, supported by the Governor, and funded by the Legislature initially through enactment of Act 307 of the Public Acts of 1969, and subsequently under Act 38 of the Public Acts of 1970.

Early in 1975, the State Board of Education adopted a statement recommending that:

1) The expansion of the assessment program to the first, tenth, and twelfth grade levels be postponed two years. Pilot testing of assessment items would be continued.

2) Resources originally planned for every-pupil testing at the first grade level should be shifted to further research and development. Specifically, we need to show the value of the assessment program to policymakers at the state level, and determine the relationship between educational programs and student learning.

3) The State Board of Education direct staff or hire an outside consultant to prepare a state plan for improving student learning.

4) The State Board of Education make a commitment to expand efforts in developing the "affective domain" and in providing "humanistic" education for Michigan school children.

In response to this directive, the 1975-76 assessment program will: (1) continue every-pupil testing in fourth and seventh grade reading and mathematics with more emphasis on utilization of the assessment data; (2) try out new experimental items at the fourth and seventh grade levels; (3) continue to pilot new first grade assessment materials; and (4) pilot grade ten on a limited, voluntary basis. In addition, because of the Department of Education's commitment to the affective education of Michigan students, staff members are studying the affective dimension of the existing performance objectives and are investigating new affective measuring instruments.

In the past, the Assessment Program has published five basic reports:

1. Objectives and Procedures
2. Individual Student and Classroom Reports: Explanatory Materials
3. School and District Reports: Explanatory Materials
4. State Summary of Results
5. Technical Report

This year, however, reports two and three will be combined into a single report entitled Understanding and Utilizing the Data of the 1975-76 Michigan Educational Assessment Program.

Objectives and Procedures, the first in the 1975-76 series, presents the objectives of the assessment program, indicates in detail some of the specific procedures to be used in the current year. It was prepared by assessment staff members. Questions or requests for additional information relative to this report should be directed to them.

John W. Porter
Superintendent of Public Instruction

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INTRODUCTION

For the last few years, the State Board of Education has encouraged Michigan educators to improve their educational operations and programs through better planning methods. The Board has adopted a six-step educational management system consisting of: (1) the identification of common goals, (2) the development of performance objectives, (3) assessment of needs, (4) analysis of delivery systems, (5) evaluation, and (6) recommendations for improvement. These six steps are described in detail in other Department publications and will not be repeated here.

The Michigan Educational Assessment Program (MEAP) since January, 1970, has provided information which can contribute to the assessment of needs. The program has collected, analyzed, and disseminated information on district and school resources, student background, school and student academic performance in the basic skills, and school and district size. These data are useful in describing certain aspects of Michigan education and can be used by decision-makers at the school, district, and state levels.

The educational assessment program has been evolving, and its operations have changed over the past six years in the attempt to provide accurate and timely data to state and local educators and citizens for the improvement of educational programs. Some variables have been redefined or dropped, and new variables have been added as attempts are made to understand the factors affecting education.

Between 1970 and 1973, the assessment program revised the achievement measures to update their content, modify individual test items, or otherwise improve the design. However, in the school year 1973-74, the program made a revolutionary change from norm-referenced to objective-referenced tests. A major change was also made in 1974-75 -- namely, the introduction of a statewide first grade pilot, which will be continued with different objectives in 1975-76.[1] The development and adoption of these tests is a direct outgrowth of the State Board of Education's educational planning model.

The Development of Performance Objectives

As has been indicated, the educational management model begins with a clear statement of educational goals which can be found in The Common Goals of Michigan Education, approved and published in 1971.

All goal areas must be further defined, however, to permit measuring the extent to which each goal is successfully attained. This definition stage identifies certain indicators directly related to a specific goal area and for which accurate data may be collected. In the case of the academic goal areas, greater

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[1] For a discussion of the rationale for the first grade assessment, refer to: Michigan Educational Assessment Program: Grades to be Assessed (Michigan Department of Education, 1974).

definition is achieved by specifying learner performance objectives.

To accomplish specification of these objectives, Grade Level Commissions were established in November, 1971, which were composed of teachers, curriculum specialists, school administrators, and lay citizens who were nominated for membership by various professional and civic organizations. These groups were given the responsibility of reviewing performance objectives then being developed by various referent groups in eight basic skill areas. These referent groups developed draft objectives in art, communication skills (including foreign language), health education, mathematics, music, physical education, science, and social studies. Preprimary objectives appropriate for entry-level first graders and directed toward the cognitive, affective, and psychomotor domains were also developed. These objectives form the basis for the first grade educational assessment pilot which was introduced last year.

The State Board of Education has reviewed and approved each of these sets of objectives. Draft versions of the objectives were distributed to all school districts during the 1973-74 school year and the final versions have now been printed and distributed. As data on these objectives are collected, the Department will undertake reviews of the objectives which will involve subject area specialists throughout the state.

Nature of Minimal Skill Objectives

The performance objectives approved by the State Board of Education are not meant to cover every aspect of instruction but are, instead, minimal skill objectives which are desirable for most students to attain. A local district should expect to supplement these objectives with others in order to provide an adequate curriculum.

Unfortunately, the nature of minimal objectives has been frequently misunderstood in past years. The Department of Education did not expect -- on the basis of empirical data -- that the objectives would be attained by 90 to 100 percent of the state's students in the 1973-74 or 1974-75 assessments. Indeed, available evidence suggested that attainment rates would vary among the objectives. The Department's position is that these minimal objectives are ones which most students should attain as soon as possible.

The Development of Objective-Referenced Tests

Along with the effort to develop performance objectives in the basic skills areas, the State Board of Education and the Superintendent of Public Instruction directed staff in 1972 to develop objective-referenced tests for use in the educational assessment program. These tests were developed to measure some of the performance objectives in reading and mathematics and were successfully piloted during the 1972-73 school year in five Michigan school districts.

In the 1973-74 assessment program, the new objective-referenced tests were used. The tests measured a portion of the total set of objectives -- 23 reading objectives and 35 mathematics objectives at grade four and 23 reading objectives and 45 mathematics objectives at grade seven.

The first grade assessment pilot, described later in this report, was similarly developed. The Department of Education worked cooperatively with a technical support contractor and four local school districts: Detroit, Gwinn, Pontiac, and Waterford. Test items were written by educators in these districts and pretested during the 1973-74 and 1974-75 school years.

Statewide Assessment Item Tryouts

The 1975-76 educational assessment will gather pilot data on new test items developed for selected health, reading, and mathematics objectives. The health objectives are included in APPENDIX A. The math and reading experimental items are designed to test the same objectives used in 1973-74 and 1974-75. These objectives may be found in APPENDIX B. Data will be collected from statewide samples of students in the fourth and seventh grades.

The purpose of administering these items is to gather essential data on the psychometric properties of the test questions, not to gather individual pupil or statewide data on the attainment of the objectives for reporting purposes.

These new test items were written as part of a cooperative effort between the Department of Education, college and university specialists, and educators from many school districts. These districts are assisting the Department to build a file of test items which may be used in future assessments and as a resource for local educators in conducting local needs assessments.

First Grade Educational Assessment Pilot

The first grade educational assessment program introduced in the 1974-75 school year and continuing in 1975-76 is considered by the State Board of Education to be a pilot project, and Michigan educators should view it in that regard.

The first grade component is different from the fourth and seventh grade components because of the unique requirements of administering objective-referenced tests to students of this age. The tests must be administered either individually or in small groups. This could require enormous amounts of teacher time unless restrictions are placed on the number of items used per objective, the number of objectives tested, and the type of data output expected.

This problem was solved by gathering only enough data to yield reliable statewide results and by limiting the objectives measured to forty-eight in 1974-75 and thirty-two this year. As in 1974-75, the tests will be administered in a statewide sample of schools--not all schools. Test administrators in the 640 selected schools will invest a small amount of time to administer the instruments and will gain individual pupil information on the one objective they test in any particular classroom.

The test results for the statewide sample will yield reliable data on the objectives tested. This information will be useful in improving the test items and administration procedures, for revising the objectives themselves, and for determining the extent and nature of educational needs as reflected by the results.

Grade 10 Limited Pilot Project

The development of assessment materials for the grade ten educational assessment program began in July, 1974, with the selection of the performance objectives to be measured. All of the performance objectives selected were taken from the sets of grade seven through nine objectives published by the Department. Twenty of the grades 7-9 reading performance objectives were selected for use in item writing. Because of the large number of mathematics performance objectives for grades 7-9 (over 155), representatives of the Michigan Council of Teachers of Mathematics (MCTM) selected 71 performance objectives to be measured first.

Four school districts (Detroit, Gwinn, Pontiac, and Waterford) provided teachers and specialists who wrote test items. After a review and selection meeting, the technical support contractor for the Department assembled items into tryout booklets which were then used in the four school districts. The contractor processed the tryout data and prepared the versions of booklets which will be used on a pilot basis this year.

Procedures of the Pilot

The tests will be administered as a pilot assessment in a group of volunteer high schools. This pilot program will focus on disseminating information about the Michigan Educational Assessment Program to school staff, trying out various test administration procedures, and providing information on various methods of utilizing objective-referenced test information. To serve these purposes, the staff of the assessment program will conduct professional development sessions for secondary school staffs.

The approximately one hundred objectives will be divided into four tests which will include only multiple-choice test items. No student will need to expend more than 210 minutes on the project, and all tenth grade students in the thirty volunteer schools will participate.

Program Components

Basically, the tenth grade project embodies five main components:

1. Orientation of high school staff persons to the assessment program.

2. The tryout of test administration directions and procedures in a practical high school setting.

3. The tryout of the test questions with complete groups of high school students and use of the collected responses for the selection or refinement of these questions for the final test instruments.

4. The collection of teacher and student reactions to the objectives, the test questions, the test administration procedures, and the form and usefulness of the results.

5. The preparation of a report of overall results for the participant sample on all objectives tested.

To insure that the procedures and instruments are suitable for widespread use, an effort has been made to attract volunteer high schools of all sizes and circumstances; however, to keep the project within resource constraints, it was necessary to limit participation. Since the Department was unable to accept for participation every high school that volunteered, selections were randomly made within the various strata of high schools. All high schools were stratified according to size (10th grade enrollment) and district achievement level (according to the 7th grade attainment rates on the 1974-75 reading assessment). A quota was set for each stratum and schools were selected up to that quota.

SECTION I

OBJECTIVES OF THE 1975-76 MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM

The major purpose of the Michigan Educational Assessment Program is to provide information to citizens and educators with which they can make educational decisions. The underlying assumption of the program is that informed citizens make better educational decisions. Within this broad purpose are imbedded three specific objectives which are discussed in this section.

Objective One

The first objective of the MEAP is to provide the State Board of Education, the Executive Office, the Legislature, and citizens with data describing the levels of basic skills attainment and other relevant descriptive data about each of Michigan's schools and school districts.

As has been stated, the state's citizens are often placed in a position of having to make education decisions which vary, depending upon whether one is a typical citizen deciding upon a local school millage issue or a state legislator deciding upon an important school financing law. In any case, people are capable of making better decisions given access to quality information, and the MEAP can provide some of this information.

The assessment program reports descriptive data about each K-12 school district on nineteen different variables which are reported in various ways. In the case of the resource measures, percent of racial ethnic minority students, drop-out rate, and size, a single value is reported. These values are also reported in terms of percentile distributions of Michigan school districts.

In the case of the achievement data in reading and mathematics, special reporting techniques have been developed which are unique to the nature of objective-referenced tests. Essentially, these reports show the percent of students who have attained the various minimal performance objectives.

Objective Two

The second objective of the MEAP is to provide local educators with specific information about the levels of educational attainment of students in the basic skills and other relevant descriptive data for their own schools and school districts.

While the provision of data to local educators has always been a feature of the assessment program, the 1975-76 MEAP will continue an effort begun in 1973-74 to concentrate on this dimension. If education is going to continue to improve in the state it will do so more effectively when the individual classroom teacher is involved in the process and has available detailed information on student achievement. Given this information, the teacher can plan proper instructional activities for students.

The 1975-76 MEAP will provide these needed data for the classroom teacher by its use of objective-referenced tests and by reporting data on both an individual and a classroom basis. Hence, for each of the objectives measured, the teacher will have detailed analyses of how each pupil performed on each test question and which objectives the pupil has attained. These data, summarized for the whole classroom, provide an overall picture of the educational skill levels of the total group.[2]

Additionally, similar summary data (plus the resource and other descriptive variables) will be aggregated and reported for the school building and the school district. The knowledge of the performance levels of the entire state on the achievement measures, combined with the percentile distribution for the resource data, will provide a powerful tool to local administrators for better understanding their district. Specific needs within the parameters of the included performance objectives can be identified easily, and appropriate actions can be planned.

Since so much individual student achievement information will be available, local educators will have a unique opportunity to involve students and parents in the educational program by sharing results of the tests with them. Thus, students and parents can be encouraged to join with teachers to plan programs to meet individual needs. Because of the importance of communicating test results to parents, the Michigan Educational Assessment Program is continuing to develop and pilot appropriate parent reporting methods this year. Such methods are being tried out in several districts to ascertain which method(s) might be used as a regular feature of the program in the future.

The Michigan Department of Education encourages the distribution and interpretation of school and district data to the public by local educators.

Objective Three

<u>The third objective of the Michigan Educational Assessment Program is to provide information regarding the progress of the entire Michigan educational system and the progress of its school districts and schools over a period of years to the State Board of Education, the Executive Office, the Legislature, and citizens</u>.

Prior to the initiation of the assessment program, there was little or no information on achievement levels of students across the state's various school districts. It was not possible to trace longitudinal progress -- or lack of it -- in the state's educational system. Thus, one could not observe changing trends in the programs for the equalization of educational opportunity or in student performance.

The advent of the MEAP made such analyses possible. Even though the tests for the first four years of the program were somewhat different in content, certain measurement techniques made it possible to trace educational progress from 1970 to 1973.

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[2]This applies <u>only</u> to the every-pupil portion of the assessment tests.

The change to objective-referenced tests created a break in the continuity of longitudinal analyses since the previous normative tests did not yield the same type of information as the objective-referenced tests. Such analyses are again possible and will be in the future as measurement on selected objectives is repeated from year to year. For example, progress data comparing 1973-74 to 1974-75 to 1975-76 will be available this year since the majority of objectives tested are unchanged.

SECTION II

PROCEDURAL ASPECTS OF THE 1975-76 MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM

As in the last two years, the Michigan Educational Assessment Program is conducted by Research, Evaluation, and Assessment Services (REAS), Michigan Department of Education, with the assistance of a technical support contractor. The REAS Advisory Council and the Council on Elementary and Secondary Education provide advice about the program as do educators in informal ad hoc groups in regional meetings. The State Board of Education provides policy directions.

All public school pupils in grades four and seven (with the exception of certain special education students as explained later) will be included in the 1975-76 program and will take the assessment tests and experimental items in health, mathematics, or reading. However, at the first grade level, only a sample of Michigan schools — not districts — which enroll first graders will be included. The specific sampling methodologies are explained later in the section entitled "Sampling in the Assessment Program."

Resource Measures

Six major categories of measures will be used in the 1975-76 program and include: (A) Human Resources, (B) District Financial Resources, (C) Percent Minority, (D) Dropout Rate, (E) Student Achievement, and (F) Size Measures. Definitions for these variables may be found in the 1974-75 report entitled School and District Reports: Explanatory Materials. These definitions have not been changed from those used in the 1974-75 program.

These six groups of measures are not all aggregated and reported in the same way. They are variously reported at the state, district, school, classroom, and individual student levels. TABLE I lists the measures which are aggregated and reported at the fourth and seventh grade levels, while TABLE II shows the measures for the first grade.

Achievement Measures

The 1975-76 program provides achievement measures for grades one, four and seven. The measures at all three grades are objective-referenced tests which were constructed through cooperative efforts of selected school districts, technical support contractors, and the Department of Education. Since the measures for grade one differ substantially from those at grades four and seven, they will be discussed separately.

Grade One Measures. The entry-level grade one educational assessment instruments were developed in a project begun in 1973. Under the directions of the Department, four school districts (Detroit, Gwinn, Pontiac, and Waterford) wrote the test items. The test items were reviewed and edited by a technical support

TABLE I

MEASURES AGGREGATED AND REPORTED AT THE FOURTH AND SEVENTH GRADE LEVELS

Measures	Level of Aggregation and Reporting			
	State	District	School	Individual
A. Human Resources (1974-75)				
1. Professional Instructional Staff per 1,000 Pupils	X	X	X	
2. Teachers per 1,000 Pupils	X	X	X	
3. Average Years Teaching Experience	X	X	X	
4. Percent of Teachers with Master's Degree or Above	X	X	X	
5. Average Contracted Salary per Teacher	X	X	X	
B. District Financial Resources (1973-74)				
6. State Equalized Valuation per Resident Member	X	X		
7. Local Revenue per Pupil	X	X		
8. State School Aid per Pupil	X	X		
9. K-12 Instructional Expense per Pupil	X	X		
10. Elementary Instructional Expense per Pupil	X	X		
11. Total Current Operating Expense per Pupil	X	X		
12. Total Operating Millage	X	X		
C. Percent Minority (1974-75)				
13. Percent of Racial-Ethnic Minority Students	X	X	X	
D. Dropout Rate (1973-74)				
14. School Dropout Rate	X	X		
E. Student Achievement (1975-76)				
15. Reading	X	X	X	X
16. Mathematics	X	X	X	X
F. Size (1974-75)				
17. Grade 4 Membership	X	X	X	
18. Grade 7 Membership	X	X	X	
19. Total Membership	X	X	X	

TABLE II

MEASURES AGGREGATED AND REPORTED ONLY AT THE FIRST GRADE LEVEL

Measures	Level of Aggregation and Reporting			
	State	District	School	Individual
Student Achievement				
1. Cognitive (22 Objectives)	X			X[a]
2. Affective (2 Objectives)	X			X[a]
3. Psychomotor (8 Objectives)	X			X[a]

[a]Only for the first grade students in a participating school.

contractor and then tried out in the four school districts. Item revisions were based both on teacher comments and reviews by teachers and specialists. The final instruments were produced by the technical support contractor following specifications approved by the Department.

In the 1974-75 pilot, 44 separate tests measuring 48 of the preprimary performance objectives were administered. In this year's pilot, 32 different objectives will be measured in the cognitive, affective, and psychomotor domains. (A teacher will administer only one test covering one objective.) The objectives to be tested are listed in APPENDIX C.

Grade Four and Seven Measures. The fourth and seventh grade tests to be used in the 1975-76 program were written and validated in the 1972-73 school year and used statewide in the 1973-74 and 1974-75 programs. Based on the results of the 1974-75 assessment and with the advice of professional organizations and curriculum specialists, some test items were clarified by word changes or improvements in accompanying artwork. The content of the fourth and seventh grade mathematics and reading tests is discussed below.

Mathematics. The fourth grade mathematics test measures 30 minimal performance objectives. The seventh grade test measures 40 objectives. There are five multiple-choice test items for each objective in both tests. Each test will have several items that are to be read to the student by the test administrator.

Reading. The fourth grade reading test measures 19 performance objectives, while the seventh grade test measures 20 performance objectives. As with the mathematics tests, there are five test items measuring each performance objective at both grades. The fourth grade test contains several items that are to be read to students by the test administrator.

Experimental Item Tryout. A special feature of the 1975-76 educational assessment is the inclusion of experimental items in reading, health, and mathematics. These items will involve all public school fourth and seventh grade students in the state and will require about thirty minutes of additional time. The results will be aggregated only at the state level and will be used to select items appropriate for future educational assessment tests. The health, mathematics and reading objectives pretested in the 1975-76 MEAP are listed in APPENDICES A and B.

Assessment Test Administration

Scheduled Dates of Test Administration

Because the first, fourth and seventh grade educational assessment instruments measure minimal performance objectives which all students should attain by the beginning of first, fourth and seventh grades, it is important that the date of testing be early fall. This will provide local educators time to use the test results to provide for specific educational needs of students when the results are returned.

The time between September 15th and October 3rd (three weeks) has been designated for administering the educational assessment instruments. In addition, the time

between October 6th and October 9th has been set aside for make-up testing. The extra week at the beginning of the testing time (September 15-19) is to give districts the option of early testing so that they may receive their results as soon in the semester as possible.

While few limitations are imposed on the scheduling of the battery within the designated period, three main considerations should be borne in mind. First, by scheduling the battery early in the three-week period, more time will be left to hold a make-up session for students. Second, it is generally believed that pupil performance on achievement batteries is adversely affected by such things as "Monday morning blues" and "Friday afternoon daze." Last, to prevent student fatigue, no testing session should last more than one hour. To the extent that these conditions can be predicted, it seems wise to schedule the battery to avoid them.

Each district will need to review its own calendar to determine the best test administration schedule for its own pupils. Districts with irresolvable time conflicts should notify staff of the educational assessment program, Department of Education (Telephone: 517--373-8393).

Local District Administration Responsibilities

It is the responsibility of the local district officials to arrange for facilities, allocate time, and determine the other activities necessary to the administration of the assessment tests. The tests may be given by the school principal, classroom teacher, guidance counselor, or other qualified professionals. The tests should be administered in the regular classroom at the first and fourth grade levels, but at the seventh grade level, either the classroom or a large group setting such as the library or study hall may be used. In any case, adequate lighting and work surfaces should be provided, and the facilities should be free of extraneous noises and distractions. In some schools a public address system has been used effectively to provide directions to classroom groups working under the supervision of teachers.

The persons chosen to administer the battery should be selected by local school officials, notified well in advance of the administration date, supplied with the necessary materials, and trained in the use of the materials.

Statewide Standardization of Administration

The superintendent in each K-12 district has been asked to designate a local district coordinator whose responsibility it will be to: (a) receive the materials; (b) distribute them to buildings; (c) train the test administrators; (d) collect the used and unused materials (both the answer sheets and the booklets); (e) destroy (through recycling if possible) extra used and unused booklets and unused answer sheets; and (f) return to Westinghouse Learning Corporation/Measurement Research Center the completed answer sheets and other required materials as requested in the Assessment Administration Manual. In addition, the coordinator will answer (or relay to the Department of Education) questions that arise in the district concerning the program, the materials, or their intended use.

In non-K-12 districts, the local district coordinator's function will, in general, be performed by a coordinator designated by the intermediate district superintendent.

Various manuals will accompany the test materials to assist the individuals concerned with the assessment program: (a) the Local District and Intermediate District Coordinator's Manual; (b) the School Coordinator's Manual; and (c) the Assessment Administration Manual (different for grades 1, 4, and 7). The procedures outlined in these manuals are to ensure a statewide consistency in the administration of the assessment battery.

In non-K-12 districts, the materials will be sent to the intermediate district coordinator.

A school coordinator for each school that will test within the district will need to be appointed by each local district coordinator. The school coordinator is responsible for all materials supplied to him/her by the local district coordinator.

After the administration, the assessment booklets and answer sheets, both used and unused, are to be returned to the local district or intermediate district coordinator from whom they were secured. The coordinator will be responsible for all materials supplied to him/her and for returning the proper materials.

Students To Be Tested

All students currently enrolled in the first (if the school was selected), fourth, and seventh grades and receiving regular classroom instruction are to be tested. At fourth and seventh grades "regular classroom instruction" means instruction in reading and mathematics. Included in this group are students who receive itinerant services (e.g., educable mentally impaired, emotionally impaired, hearing impaired, physically and otherwise health impaired, and speech and language impaired). Students in special classes for the impaired should be tested only if testing can be completed without physical or emotional harm. Individual cases should be judged by the regular classroom teacher with the help of the school coordinator, or the district coordinator, if necessary.

Students in nongraded programs who can be identified as first (if the school was selected), fourth, or seventh graders are to be tested. Students whose grade level cannot be determined are to be included if they are in their first, fourth, or seventh year beyond kindergarten. First grade students who attend public schools on a shared-time basis from nonpublic schools may be included at district option. Fourth and seventh grade students who attend public schools on a shared-time basis from nonpublic schools should take the assessment battery if they are in the public schools for instruction in reading and mathematics. If instruction in only one of these areas is provided by public schools, the student may, at the option of the local district: (a) take only those aspects of the battery for which he/she received public school instruction, (b) be given all of the tests, or (c) be excluded from taking any of the tests.

It should be noted that nonpublic schools are permitted to administer the assessment battery to their seventh grade pupils by prior arrangement with the MEAP. Care should be taken that duplicate testing of seventh grade pupils who participate in shared-time programs does not occur (i.e., that these students are not administered the assessment battery in both public and nonpublic schools).

Students Not To Be Tested

Students who are severely mentally impaired or trainable mentally impaired should not be tested. Students who are educable mentally impaired should not be tested unless they participate in regular classroom programs. Other impaired students who receive instruction in special classes and not in the regular programs may be excluded from testing at the discretion of the School or District Coordinator.

In addition, any student who suffers severe emotional trauma during testing situations may be excused from taking the assessment battery. The decision to excuse a student from completing the assessment test should be made only after consultation with the principal, the Assessment Coordinator, and the classroom teacher.

Test Timing

Grades Four and Seven. The reading and mathematics objective-referenced tests used in the 1975-76 program are untimed, allowing students to complete the tests at their own pace. Generally, fourth and seventh grade students will be able to complete both achievement instruments (mathematics and reading) in two to four hours with an additional 30 minutes for the experimental items. Experience has shown that over 90 percent can complete the tests in that amount of time.

The untimed nature of the mathematics and reading tests will allow testing periods to be scheduled to fit class periods, particularly at seventh grade. The time needed to complete the test by all students depends on how quickly they work, as well as time needed for questions, directions, and so forth. More detailed information will be included in the Assessment Administration Manual which will accompany the assessment materials.

Grade One. The tests to be used at grade one are also untimed, with the teacher establishing the appropriate pace. The tests fall into two categories: (1) those that are administered to small groups, and (2) those that are individually administered. In most cases, a single test administration of any small group test can be completed within 20 minutes. A single administration of any of the individually-administered tests can be completed within five minutes. Of course, the total testing time depends on the number of students in the classroom, as well as the pace at which each student works. It is anticipated, however, that no first grade teacher will need to spend more than three hours of time for pre-administration reviews of the test, test administration, and post administration completion of answer sheets.

Sampling in the Assessment Program

As has been mentioned elsewhere in this report, the 1975-76 educational assessment program utilizes sampling procedures. These procedures are used to generate reliable statewide data without having to test each student on all of the test items.

The sampling procedure applies at the first grade level for the entire pilot assessment. For the fourth and seventh grades, the sampling procedures apply only to the experimental items in health, mathematics and reading.

The first grade sample was drawn at the school level. That is, a stratified list of schools which contain first grade was compiled and from it the necessary number of units was randomly selected. Every student in the first grade in a selected school will take the single test assigned to that school.

The first grade assessment tests are divided into 32 test forms. At the fourth grade, there are 42 test forms, and at the seventh grade there are 42. For purposes of deriving reliable statewide data, approximately 1,200 student responses (minimum) are needed for each form. Because of differences in sizes of Michigan schools, however, the samples actually include more students than this minimum number.

Table III shows the number of test forms, schools per form, total number of schools, and approximate number of students to be included in the assessment samples. Although all pupils in grades four and seven will take part in the sample, no pupil will need more than 30 minutes of additional testing time.

TABLE III

NUMBERS OF TEST FORMS, SCHOOLS, AND STUDENTS COMPOSING THE 1975-76 MEAP SAMPLE

Grade Level	Number of Test Forms	Schools per Form	Number of Schools	Total Number of Students
One	32	20	640	48,000[a]
Four	42	Not Applicable	ALL	ALL
Seven	42	Not Applicable	ALL	ALL

[a]approximation

Reporting of Results

Type of Data to be Generated

The results of the objective-referenced tests to be used in 1975-76 at grades four and seven (in mathematics and reading) will be presented in much the same way as the results of the mathematics and reading tests used in the 1974-75 program.

For each student, the following types of information will be provided:

1) whether the student correctly answered each test item and, if not, the incorrect answer selected;

2) the number of items correctly answered for each objective; and

3) whether or not the student has attained each objective and the total number of objectives attained.

For the classroom, school and district, the following types of information will be provided:

1) the percent of students correctly answering 0, 1, 2, 3, 4, or 5 of the items for each objective;

2) the percent of students who attained each objective; and

3) a listing of the students who attained each objective (for classroom only).

For each school and district, a foil analysis, which is new this year, will provide the percent of students that chose each foil (possible answer) for each item.

Seventh grade mathematics and English teachers will receive separate Individual Student Reports so that the mathematics test results may be provided to the mathematics teacher and the reading results to the English teacher. Also, the classroom listing summaries are printed separately for the English and mathematics teachers. In order to make this possible, it is necessary for students to code their mathematics teacher and English teacher on their answer sheet. More details on this are provided in the Grade 7 Assessment Administration Manual.

Because of the sampling procedures used, no first grade results will be returned to teachers, schools, or districts. Each participating first grade teacher will score each student's answers and record them on a two-part answer sheet. The teacher will then keep a copy of the answer sheet as a personal reference and school record and will return the original to the MEAP Scoring Service. Because only statewide results will be compiled from the 1975-76 program, no other results will be released publicly for first grade.

Availability of Results

It is planned that data on individual students, classrooms, schools, and districts

will be reported by mid-November, depending on receipt of the completed answer sheets by the MEAP Scoring Service. Answer sheets should be processed and all results mailed to local districts within three weeks of receipt by the MEAP Scoring Service. A booklet of explanatory materials will accompany the results. It is designed to help teachers interpret individual student and classroom results and to help administrators interpret the school and district summaries of the results.

Optional Reports

Two optional methods of reporting assessment results are available to each school district in addition to the reports mentioned earlier. The first option is the reporting of seventh grade results according to feeder elementary schools. This option is available at no cost to the district and must be elected before the student answer sheets are returned for processing. The district will need to instruct students to supply the special code for the elementary school they attended. This code is the official four-digit building number assigned to each school by the Department. Each district will be supplied a list of these schools and their codes with the assessment materials. A summary report will be prepared for each feeder elementary school.

The second optional reporting method available to districts will provide a district summary report for any grouping of data which the district wishes. The students simply code on the answer sheet a special number which then is used to group the student achievement scores for reporting purposes. This option must also be selected before answer sheets are returned and will be processed at the local district's cost.

Specific information on procedures for both options are in the school and district coordinator's manuals. Cost information is in the District Coordinator's Manual.

Interpretation Assistance

The Michigan Educational Assessment Program staff attempts to be of assistance to local school district personnel in interpreting the assessment data received by the districts. Each year, regional meetings are conducted by MEAP staff to provide information to local school personnel. In addition the program has included five basic reports (referred to in the Foreword) which describe the program in some detail. In the last two years, these reports have been supplemented by color filmstrip/tape speaker's kits which were distributed to local school districts. These are entitled:

1) "Michigan's New Teacher's Aid,"

2) "Interpreting the Results of the 1973-74 Michigan Educational Assessment Program,"

3) "Michigan Educational Assessment Program 1974-75."

This year the Program follows somewhat the same procedures as last year. These are:

1) the publication of four basic reports,

2) the design and production of new filmstrip speaker's kit on school utilization of assessment results to be sent to each district,

3) two briefings for local district coordinators, in May and September,

4) fall workshops for local district administrators in the interpretation and utilization of assessment results, and

5) individual consultation with districts.

Notification of the workshops and briefings is normally sent to district superintendents and assessment coordinators well in advance of the appropriate dates. All reports (a list of MEAP publications may be found in APPENDIX E) are routinely mailed in varying quantities to each school district.

The small staff of the educational assessment program can never communicate directly with each local district teacher or building principal. The MEAP approach, therefore, is to provide information and assistance to certain key people in each district who can then assist others. This approach multiplies the communication power of the MEAP staff and can lead to a desired level of understanding and utilization of the program data.

SUMMARY

This report Objectives and Procedures is written for local educators who are responsible for the administration of the Michigan Educational Assessment Program (MEAP) tests and for other people who are generally interested in the purposes and methodology of MEAP.

The 1975-76 assessment will report nineteen variables at the student, classroom, school or district levels, in the areas of a) Human Resources, b) District Financial Resources, c) Percent Minority, d) Dropout Rate, e) Student Achievement, and f) Size. The minimal performance objectives and MEAP tests were mainly developed by Michigan teachers and curriculum specialists.

In addition to every-pupil testing of fourth and seventh graders in reading and mathematics, the 1975-76 program will continue the first grade pilot testing begun in 1974-75 in a selected sample of schools. The introduction of a volunteer grade 10 limited pilot project is the greatest change from previous years' assessment programs.

This report also presents general information on the procedural aspects of the assessment program which will be found in greater detail in coordinator, administrator, and interpretive manuals which will accompany the MEAP testing materials and resultant data.

APPENDIX A

HEALTH OBJECTIVES
PRETESTED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM
Grade 4

Objective Area and Number	
	Disease Prevention and Control
Disease Characteristics	
1	By the end of the third grade, students will distinguish between being "well" and being "sick."
2	By the end of the third grade, students will value "wellness."
3	By the end of the third grade, students will exhibit knowledge of common childhood disease signs and symptoms (e.g., nausea, headache, fever, pain, etc.).
Disease Causation	
1	By the end of the third grade, students will demonstrate knowledge that germs causing disease are spread in different ways (e.g., people, animals, water, etc.).
2	By the end of the third grade, students will demonstrate knowledge of causes of illness.
Disease Prevention and Control	
1	By the end of the third grade, students will demonstrate knowledge of ways of limiting the effects of diseases (e.g., early recognition and reporting, prompt treatment, etc.).
2	By the end of the third grade, students will exhibit knowledge of ways which prevent diseases from developing and spreading (e.g., isolation, treatment, immunization, good health habits, etc.).
	Personal Health Practices
Dental Health	
1	By the end of the third grade, students will demonstrate knowledge of the location and basic function of the teeth.
2	By the end of the third grade, students will demonstrate knowledge of how foods affect the health of teeth.

Objective Area and Number	
Dental Health	
3	By the end of the third grade, students will apply dental health methods and utensils to the care of their teeth.
4	By the end of the third grade, students will demonstrate knowledge of the importance of dental care.
Personal Care	
1	By the end of the third grade, students will demonstrate knowledge of activities which help promote cleanliness and improve personal appearance.
2	By the end of the third grade, students will demonstrate knowledge of proper clothing selection for various weather conditions.
3	By the end of the third grade, students will value the role of sleep, rest, and exercise in promoting good health.
4	By the end of the third grade, students will demonstrate knowledge of eye function and care.
5	By the end of the third grade, students will demonstrate knowledge of ear function and care.
6	By the end of the third grade, students will value the importance of reporting to parents or teachers any problem they may be having with any parts of their bodies (e.g., splinters, sore throat, headache, toothache, etc.).
	Nutrition
Foods and Food Groupings	
1	By the end of third grade, students will identify a variety of foods taken from the four basic food groups.
2	By the end of the third grade, students will classify foods according to the basic four food groups.
Food and Health	
1	By the end of the third grade, students will demonstrate knowledge of the general relationship between food consumption and health.
	Growth and Development
Major Body Parts	
1	By the end of the third grade, students will identify common body parts by correct name, (e.g., arms, legs, stomach, heart, cells, eyes and ears, etc.)

Objective Area and Number	
Major Body Parts	
2	By the end of the third grade, students will identify simple functions of common body parts (e.g., skin, heart, lungs, sense organs, etc.).
Individual Growth	
1	By the end of the third grade, students will identify the major factors which affect physical and social growth (e.g., food, water, climate, habits, family members, etc.).
2	By the end of the third grade, students will identify the different ways a child grows to become unique (e.g., body type, physical appearance, abilities and skills, likes and dislikes, etc.).
3	By the end of the third grade, students will list common differences and similarities of boys and girls (e.g., differences in rate of growth, physical characteristics, similarities in activities, hobbies, interests, feelings, etc.).
Origin of Living Things	
1	By the end of the third grade, students will demonstrate awareness that all living things come from living things (e.g., all life begins the same way, species reproduce their own kind, etc.).
2	By the end of the third grade, students will identify the different ways living things reproduce themselves from a fertilized egg (e.g., plants come from seeds, some animals reproduce from eggs fertilized outside the mother's body, others reproduce from eggs fertilized inside the mother's body, etc.).

Family Health

Types of Families	
1	By the end of the third grade, students will demonstrate knowledge of types of families (e.g., one parent, two parents, grandparents, extended family).
Family Roles and Responsibilities	
1	By the end of the third grade, students will identify their contributions and responsibilities as a family member.
2	By the end of the third grade, students will demonstrate knowledge of difference and similarities between roles of family members.

Objective Area and Number	
Family Roles and Responsibilities	
3	By the end of the third grade, students will demonstrate knowledge of reasons why families are needed.
4	By the end of the third grade, students will demonstrate knowledge of how family members contribute to the health of each other.
	Emotional and Mental Health
Feelings and Moods	
1	By the end of the third grade, students will identify ways in which people are generally different (e.g., physical characteristics, personal qualities, behavioral differences, etc.).
2	By the end of the third grade, students will demonstrate an awareness of feelings found in themselves and others.
3	By the end of the third grade, students will identify possible ways people can make constructive changes in the way they feel (e.g., changing their attitudes, asking for help from friends and family, directing energies toward hobbies, sports, recreation, etc.).
4	By the end of the third grade, students will identify personal characteristics which generally help people develop friendship (e.g., respect for others, being helpful, sharing, generosity, showing concern, accepting others, etc.).
Coping with Problems	
1	By the end of the third grade, students will accept the fact that it is natural to have a variety of feelings.
2	By the end of the third grade, students can list at least three sources of help where they can receive assistance in solving a personal problem.
3	By the end of the third grade, students are aware that they have some influence over their own personal decisions.
	Substance Use and Abuse
Poison Prevention	
1	By the end of the third grade, students will demonstrate knowledge of factors important to the prevention of poisoning.

Objective Area and Number	
Substance Use	
1	By the end of the third grade, students will value the use of drugs and other medicines.
2	By the end of the third grade, students will demonstrate knowledge of the consequences of abusing alcohol.
Consumer Health	
Health Workers and Agencies	
1	By the end of the third grade, students will identify those health professionals whose services they might expect to receive.
2	By the end of the third grade, students will demononstrate knowledge of community health resources.
Health Services and Projects	
1	By the end of the third grade, students will demondemonstrate knowledge of the various factors influencing the purchase of health products.
2	By the end of the third grade, students will demonstrate knowledge of how health products can be used and misused.
Safety Education	
Safety and Accident Prevention	
2	By the end of the third grade, students will demonstrate knowledge of home safety hazards.
3	By the end of the third grade, students will demonstrate knowledge of school safety practices.
5	By the end of the third grade, students will demonstrate knowledge of traffic safety practices.
6	By the end of the third grade, students will demonstrate knowledge of recreation safety practices.
7	By the end of the third grade, students will demonstrate knowledge of safety practices employed when using tools and utensils.
8	By the end of the third grade, students will demonstrate knowledge of potential hazards associated with holidays.

Objective Area and Number	
Emergency Readiness	
1	By the end of the third grade, students will demonstrate that they can get appropriate help to deal with emergency situations in home, school and community.
2	By the end of the third grade, students will demonstrate knowledge of basic first aid procedures used in emergency situations.

Community Health

Community Health	
1	By the end of the third grade, students will identify community health workers.
2	By the end of the third grade, students will identify community health organizations and their services.
Pollution	
1	By the end of the third grade, students will demonstrate knowledge of causes and controls of pollution of air, water, and ground (e.g., sewage, industrial wastes, smoke gases, ash, etc.).
2	By the end of the third grade, students will demonstrate knowledge of the relationship between pollution and health.

HEALTH OBJECTIVES
PRETESTED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM
Grade 7

Objective Area and Number	
	Disease Prevention and Control
Disease Characteristics	
1	By the end of the sixth grade, students will demonstrate knowledge of the communicable disease process.
2	By the end of the sixth grade, students will distinguish between communicable and noncommunicable diseases.
Disease Causation	
1	By the end of the sixth grade, students will demonstrate knowledge of how communicable diseases might be transmitted (e.g., droplet infection, direct contact, vectors, fomites, food and water).
2	By the end of the sixth grade, students will demonstrate knowledge of how noncommunicable diseases might be caused.
Disease Prevention and Control	
1	By the end of the sixth grade, students will exhibit knowledge of ways which prevent diseases from developing and/or spreading (e.g., immunization, good health habits, self-examination, visiting the doctor or clinic, etc.).
2	By the end of the sixth grade, students will demonstrate knowledge of ways to limit the effects of diseases (e.g., early recognition and reporting, prompt treatment, knowledge of the particular diseases, following doctor's advice, etc.)
	Personal Health Practices
Dental Care	
1	By the end of the sixth grade, students will identify the most effective type of toothbrush for use in brushing the teeth.

Objective Area and Number	
Dental Care	
2	By the end of the sixth grade, students will demonstrate knowledge of the relationship between plaque and periodontal disease potential.
3	By the end of the sixth grade, students will utilize plaque-control techniques in their personal dental care program.
4	By the end of the sixth grade, students will demonstrate knowledge of health services available in a dental office or clinic (e.g., restoration, dental X-ray, orthodontic treatment [treatment in dentistry dealing with irregularities of the teeth and their correction], endodontic treatment [treatment in dentistry concerning disease of the pulp], etc.).
5	By the end of the sixth grade, students will demonstrate comprehension of the relationship between tooth anatomy and tooth decay.
Personal Care	
1	By the end of the sixth grade, students will value good posture as a contribution to healthful living.
2	By the end of the sixth grade, students will value exercise as a contribution to healthful living.
3	By the end of the sixth grade, students will value the contribution that sleep and rest can make to healthful living.
4	By the end of the sixth grade, students will value activities which help promote fingernail and toenail care.
5	By the end of the sixth grade, students will demonstrate knowledge of factors important to healthy vision.
6	By the end of the sixth grade, students will demonstrate knowledge of ear function and care.
7	By the end of the sixth grade, students will value personal health responsibilities which both boys and girls can be expected to perform (e.g., body cleanliness, grooming, room order, dental care, etc.).

Objective Area and Number	
	Nutrition
Food Choice	
1	By the end of the sixth grade, students will list personal experiences and concerns which influence their food choices (e.g., desire for good health, family eating patterns, cost, advertising--TV, radio, magazine, tastes, etc.).
Varieties of Eating Patterns	
1	By the end of the sixth grade, students will demonstrate knowledge of the variety of foods and eating patterns.
	Growth and Development
Major Body Parts	
1	By the end of the sixth grade, students will demonstrate knowledge of cell and tissue structure and function.
2	By the end of the sixth grade, students will demonstrate comprehension of how cells, tissues and organs work together to form body systems (e.g., circulatory, respiratory, nervous, skeletal, digestive and muscular systems, etc,).
3	By the end of the sixth grade, students will demonstrate comprehension of how body systems work closely together to perform common functions (e.g., nerves control muscles, muscles control movement of bones, skin acts as a protector and respirator, etc.).
Individual Growth	
1	By the end of the sixth grade, students will identify major factors which influence physical and emotional growth.
2	By the end of the sixth grade, students will identify the changes which occur as they approach puberty (e.g., physical growth, secondary sex characteristics, changes in emotional feelings, social behavior, etc.).

Objective Area and Number	
	Family Health
Family Roles and Responsibilities	
1	By the end of the sixth grade, students will demonstrate knowledge of the favorable health outcomes of family living.
2	By the end of the sixth grade, students will demonstrate knowledge of personal responsibilities that contribute to the health of the family.
3	By the end of the sixth grade, students will demonstrate knowledge of how difference between sexes relates to family roles.
	Emotional and Mental Health
Feelings and Moods	
1	By the end of the sixth grade, students will identify personal actions which demonstrate maturity in growing up, (e.g., shows responsibility, accepts criticism, cares for others, faces difficulty, makes decisions, self-discipline, increased independence, gets along with others, etc.).
2	By the end of the sixth grade, students will demonstrate awareness of human emotions (e.g., frustration, jealousy, love, affection, etc.).
3	By the end of the sixth grade, students will exhibit an awareness that different people express the same emotion in different ways.
4	By the end of the sixth grade, students will describe how individuals constructively and destructively cope with a variety of emotions.
5	By the end of the sixth grade, students will identify changes in feelings and emotions which occur during adolescence (e.g., feelings of strong affection, attraction to opposite sex, new relationship and problems develop, possible desire to masturbate, etc.).
	Substance Use and Abuse
Smoking	
1	By the end of the sixth grade, students will analyze the effects of smoking (e.g., effects on various parts of the body, effects on body systems, cost, etc.).

Objective Area and Number	
Smoking	
2	By the end of the sixth grade, students will demonstrate comprehension of the psychological reasons people begin smoking.
3	By the end of the sixth grade, students will demonstrate comprehension of the harmful use of drugs and other medicines.
Alcohol	
1	By the end of the sixth grade, students will demonstrate comprehension of the possible uses of alcohol in our daily living.
2	By the end of the sixth grade, students will demonstrate comprehension of the negative results of the use of alcohol.
3	By the end of the sixth grade, students will identify alternatives to alcohol and other mood-modifying substances.
Substance Use/Abuse	
1	By the end of the sixth grade, students will value the positive use of drugs and other medicines.
Health Workers and Agencies	
2	By the end of the sixth grade, students will comprehend the role of health agencies in protecting the consumer.
Health Services and Products	
1	By the end of the sixth grade, students will demonstrate comprehension of both positive and negative uses of health products.
3	By the end of the sixth grade, students will identify fraudulent health practices.
Safety and Accident Prevention	
1	By the end of the sixth grade, students will demonstrate knowledge of agency involvement in safety promotion.

Objective Area and Number	
Safety and Accident Prevention	
2	By the end of the sixth grade, students will demonstrate comprehension of common human and environmental factors related to accident causation.
3	By the end of the sixth grade, students will demonstrate knowledge of home safety problems.
5	By the end of the sixth grade, students will demonstrate knowledge of school safety practices.
6	By the end of the sixth grade, students will apply knowledge of traffic safety practices.
8	By the end of the sixth grade, students will demonstrate their ability to apply fire safety practices and procedures.
10	By the end of the sixth grade, students will identify safety misconceptions which contribute to accidents.
Emergency Readiness	
1	By the end of the sixth grade, students will demonstrate knowledge of safety procedures appropriate to common emergencies in the home, school and community.
2	By the end of the sixth grade, students will apply basic first aid techniques.
Community Health	
1	By the end of the sixth grade, students will distinguish between the roles of various community health workers.
2	By the end of the sixth grade, students will distinguish community health agencies according to the service they provide.
Environment and Man	
1	By the end of the sixth grade, students will demonstrate knowledge of the relationship between environment and health.
2	By the end of the sixth grade, students will identify common sources of pollution (air, ground, and water).
Food Sanitation	
2	By the end of the sixth grade, students will demonstrate knowledge of disease prevention methods in food processing and marketing.

APPENDIX B

MATHEMATICS OBJECTIVES
MEASURED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM
Grade 4

Objective Number		
1.	AR-I-A-6	Given a set of objects, the learner will recognize objects that are the same size.
2.	AR-I-A-8	Given an object shaped like a circle, triangle, square, or rectangle, the learner will choose the shape the object represents.
3.	AR-I-A-16	Given a set of three containers, one full, one empty, and one half-filled, the learner will choose the containers that are arranged from full to empty.
4.	AR-I-A-24	Given a collection of five objects of varying lengths, the learner will identify the longest or the shortest, as requested.
5.	AR-I-A-39	Given five small toys in a line, the learner will identify the first toy and the last one.
6.	AR-I-B-7	Given a set with less than ten objects, the learner will identify an equivalent set.
7.	AR-I-B-32	Given a set of two to eight objects, the learner will identify a set having fewer members than the original set.
8.	AR-I-B-40	Given a line marked with congruent segments and a set of number cards (0-10), the learner will choose the appropriate number card for the point on the line.
9.	AR-I-B-43	Given any three numbers, 0-10, the learner will identify which number is the greatest and which is the least, on request.
10.	AR-I-B-44	Given two consecutive even or odd numbers, 0-9, the learner will name the number that comes between the two given numbers.
11.	AR-I-B-45	Given a number from 1 to 8, the learner will identify the number that comes before or after the given number.

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* This list contains only the objectives which are included in the every-pupil portion of the 1975-76 MEAP tests. A complete set of the objectives is available in the Minimal Performance Objectives for Mathematics in Michigan, Michigan Department of Education, 1973. The wording of the objectives in this APPENDIX may be different from the original wording as contained in the publication cited above. These minor wording changes were necessitated by the group-administered nature of the items developed to measure the objectives.

12. AR-I-B-64 Given a set of tens and ones representing a number less than 100, the learner will identify the numeral.

13. AR-I-B-65 Given a set of sequentially ordered whole numbers within a decade less than 100, such as 31, 32,...40, the learner will identify the number that comes immediately before or after a given number, as requested.

14. AR-I-B-67 Given 2 two-digit numbers, the learner will tell which number is greater and which number is less.

15. AR-I-B-70 Given a set of dimes and pennies valued between 11 and 99 cents (one dime, one penny, to nine dimes, nine pennies), the learner will state the value.

16. AR-I-B-81 Given a random list of two- and three-digit numbers, the learner will identify the list that is in ascending order.

17. AR-I-B-82 Given 2 three-digit numbers which have the same digits but in different positions, the learner will compare them to determine which is greater and which is less.

18. AR-I-B-34 Given a counting sequence of two or four numbers, the learner will write the next number in the sequence.

19. AR-I-B-85 Given the counting numbers 1-10, the learner will indicate those that are multiples of 2.

20. AR-I-B-86 Given a set of objects, the learner will select another set that will have twice as many objects.

21. AR-II-A-10 Given addition exercises involving a two-digit number plus a one-digit number requiring no regrouping (carrying), the learner will find the sums with or without the use of aids.

22. AR-II-B-9 Given a set of objects or pictures showing a subtraction relationship with combinations to 18, the learner will identify an appropriate number sentence.

23. AR-II-B-11 Given a subtraction word problem read by the teacher involving combinations to 18, the learner will: 1) identify the operation, 2) identify an appropriate number sentence, and 3) identify the answer.

24. AR-II-B-13 Given two sets of objects, one with more objects than the other, the learner will identify how many more members it has.

25. AR-II-B-15 Given a two-digit number, the learner will subtract one-digit numbers with no regrouping (borrowing) with or without the use of aids.

26. AR-II-B-16 Given a two-digit number, the learner will subtract a two-digit number with no regrouping (borrowing).

27. M-II-A-6 Given the reading "_____o'clock" and a clock face, the learner will identify the clock showing the appropriate time.

28. M-II-B-3 Given three to five different amounts of money, all less than or equal to $5.00, the learner will identify the greatest or the least.

29. M-II-C-1 Given a Fahrenheit or Centigrade thermometer, the learner will identify the temperature (above zero) to the nearest degree.

30. G-I-A-2 Given pictures of various shapes, the learner will identify circles, triangles, squares, and rectangles as requested.

MATHEMATICS OBJECTIVES
MEASURED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM
Grade 7

Objective Number		
1.	AR-I-B-87	Given any four-digit number, the learner will identify the number that is 100 or 1000 more or less than it is, without using formal addition or subtraction.
2.	AR-I-B-89	Given a number orally, the learner will identify the arabic numeral.
3.	AR-II-A-22	Given addition exercises involving a three-digit number plus a one-, two-, or three-digit addend, with or without regrouping (carrying), the learner will identify the sums, using any techniques.
4.	AR-II-A-26	Given addition problems involving two or three addends with three, four, five, or six digits, with or without regrouping, the learner will find the sums, using any technique.
5.	AR-II-B-20	Given a three-digit number, the learner will subtract a two or three-digit number, with or without the use of aids.
6.	AR-II-C-6	Given a repeated addition sentence, the learner will represent it as a multiplication sentence with its product.
7.	AR-II-C-11	Given two numbers, the learner will demonstrate that the order in which they are multiplied does not change the product.
8.	AR-II-C-13	Given a one-digit number and (10, 20...), (100, 200...), the learner will identify the product.
9.	AR-II-C-15	Given a two-digit number to be multiplied by a one-digit number, the learner will identify the product, with or without aids.
10.	AR-II-D-5	Given a sentence with one single digit, a missing factor, and a product (whole numbers), the learner will identify the missing factor.
11.	AR-II-D-7	Given a division fact, the learner will identify it rewritten as a multiplication fact.
12.	AR-II-D-9	Given a one-digit divisor (factor) and a dividend (product) of less than 100, the learner will identify the quotient (missing factor) if there is no remainder.

13. AR-II-D-15 Given an exercise with a dividend of four digits or less, and a one-digit divisor, the learner will identify the quotient.

14. AR-III-A-1 Given several objects, some divided into congruent parts, some divided into noncongruent parts, the learner will identify congruent parts.

15. AR-III-A-18 Given a diagram divided into congruent parts, with some parts shaded, the learner will identify the shaded area by identifying an appropriate fraction.

16. AR-III-A-19 Given any five fractions with like denominators, in random order, the learner will identify them in order (halves, thirds, fourths, fifths, sixths, eighths, tenths); with or without the use of aids.

17. AR-III-B-4 Given two common fractions with like denominators and a sum greater than 1, the learner will identify the sum, with or without the use of fractional cut-out parts.

18. AR-III-B-7 Given two mixed numbers with like denominators, the learner will identify the sum.

19. AR-III-C-4 Given a mixed number and a fraction with like denominators of 2, 3, 4, 6, or 8, where no regrouping is necessary, the learner will find the difference.

20. AR-III-C-6 Given a whole number and a common fraction with a denominator of 2, 3, 4, 6, or 8, the learner will find the difference with or without the use of fractional parts.

21. AR-III-D-4 Given two unit fractions with denominators less than seven, the learner will identify the product with or without the use of a model.

22. AR-IV-A-3 Given a model of a fraction illustrating hundredths, the learner will identify the decimal fraction as illustrated.

23. AR-IV-A-7 Given a decimal fraction of no more than three places, the learner will name the place value of each digit, without aids.

24. AR-IV-B-3 Given a verbal problem involving addition and subtraction of decimal numbers involving only tenths, the learner will find the answer.

25. AR-IV-B-6 Given a verbal problem involving addition and subtraction of decimal numbers involving tenths and hundredths, the learner will find the answer.

26. AR-IV-B-9 Given an addition and subtraction decimal problem in horizontal or vertical form with no more than five (5) digits and no more than three (3) decimal places, the learner will find the sum or difference.

27. AR-VI-15 Given a picture of sets paired in (A) a one-to-one, (B) a many-to-one, or (C) a one-to-many ratio and part of another pair, the learner will identify the pair that keeps the ratio equivalent.

28. M-I-B-8 Given a polygon, the learner will estimate its area in square units.

29. M-I-C-7 Given a drawing of a rectangular solid divided into units (dimensions less than or equal to 5 units), the learner will name the number of units in it.

30. M-II-A-10 Given a clock face with hands on it, the learner will choose the correct time notation.

31. M-II-A-11 The learner will use A.M. and P.M. notation in writing time.

32. M-II-B-7 Given two money values, the learner will add or subtract using dollars and cents notation.

33. M-II-B-9 Given verbal problems consisting of one or two operations involving money values less than or equal to $20, the learner will solve the problems.

34. M-II-C-3 Given a Fahrenheit or Centigrade thermometer the learner will identify temperatures to the nearest degree, using the degree [°] symbol.

35. G-I-A-4 Given a set of quadrilaterals, the learner will identify and name a parallelogram, a square, and a rectangle.

36. G-I-B-5 Given the description of a plane, and a part of a plane, the learner will identify surfaces which represent a plane or part of a plane.

37. AL-2 Given a statement of equality involving addition, subtraction, or multiplication facts and containing a placeholder or letter, the learner will identify the missing number.

38. AL-4 Given a pair of whole numbers or number phrases less than 1,000, the learner will identify the appropriate symbol of equality or inequality, < or = or >.

39. AL-5 Given an equation involving one or zero, the learner will complete the sentence.

40. AL-7 Given a numerical statement involving distributive property and a placeholder, the learner will insert the missing value.

READING OBJECTIVES
MEASURED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM*
Grade 4

	Objective Number	
1.	2.1	Given a reading selection at the third grade level, the learner will match a series of words in the selection with appropriate definitions.
2.	2.2	Given a set of phrases, the student will indicate those phrases which have the same meaning.
3.	3.2	Given a reading selection at the third grade level in which every fifth word has been replaced with a blank, the learner will choose the exact word appropriate to the blank space at 50% accuracy.
4.	4.1	Given a method of arranging data, the learner will identify the method (e.g., color, size, importance, time, etc.)
5.	4.4	Given a series of randomly placed words, the learner will be able to alphabetize the words through the first three letters.
6.	5.1	Given a series of reading selections, the learner will indicate those which are factual.
7.	5.2	Given a series of reading selections, the learner will indicate those which are fictional.
8.	6.1-6.3	Given a reading selection, the learner will be able to identify the author's purpose (e.g., persuasion, entertainment, propaganda, etc.)
9.	7.1	Given a reading selection at the third grade level, the learner will select from a list of possible titles the one most appropriate as the title for that selection.
10.	7.2	Given a reading selection at the third grade level, the learner will select from a series of still pictures the one picture most appropriate in depicting the main idea of the selection.
11.	7.3	Given a reading selection at the third grade level, the learner will select from a number of short summaries the one which best summarizes the selection.

*This list contains only the objectives which are included in the every-pupil portion of the 1975-76 MEAP tests. A complete set of the objectives is available in Minimal Performance Objectives for Communication Skills Education in Michigan, Michigan Department of Education.

12. 8.4 Given a reading selection at the third grade level, the learner will match a series of direct quotations from the story with the character who is speaking.

13. 10.3 Given a reading selection at the third grade level, the learner will choose from a series of sentences that sentence which best describes how a given character feels in a story.

14. 10.6 Given a selection containing figurative language, the learner will identify from a series of descriptive phrases the phrase that most accurately describes the mood expressed in the selection.

15. 11.1 Given a reading selection at the third grade level, the learner will correctly match a series of causes with a corresponding series of effects.

16. 11.2 Given a reading selection at the third grade level with the conclusion of the story deleted, the learner will select from a series of possible conclusions the one most appropriate to the selection.

17. 13.1 Given a locational question, the learner will choose from a series of reference sources where that item will be found.

18. 13.2 Given a locational question about newspapers, the learner will select the section where he would find the answer.

19. 14.1-14.3 Given a reading selection at the third grade level, the learner will answer correctly a series of multiple choice questions relating to meanings, generalizations, or conclusions not expressed in the section itself.

READING OBJECTIVES
MEASURED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM
Grade 7

	Objective Number	
1.	18.1	Given a reading selection at the sixth grade level, the learner will match a series of words in the selection with appropriate definitions.
2.	18.2	Given a set of phrases, the learner will indicate those phrases which have the same meaning.
3.	20.1	Given a method of arranging data, the learner will identify the method (e.g., sequence, importance, etc.).
4.	21.1	Given a series of randomly placed words, the learner will be able to alphabetize the words through the first three letters.
5.	22.1	Given a series of reading selections, the learner will indicate those which are factual.
6.	22.2	Given a series of reading selections, the learner will indicate those which are fictional.
7.	23.1-23.3	Given a reading selection, the learner will be able to identify the author's purpose (e.g., persuasion, entertainment, propaganda, etc.).
8.	24.1	Given a reading selection at the sixth grade level, the learner will select from a list of possible titles the one most appropriate as the title for that selection.
9.	24.2	Given a reading selection at the sixth grade level, the learner will select from a series of still pictures the one picture most appropriate in depicting the main idea of the selection.
10.	24.3	Given a reading selection at the sixth grade level, the learner will select from a number of short summaries the one which best summarizes the selection.
11.	24.4	Given a series of three or more reading selections at the sixth grade level, the learner will indicate the two most alike in the ideas expressed.
12.	25.3	Given a reading selection at the sixth grade level, the learner will match a series of direct quotations from the story with the character who is speaking.

13. 26.3 Given a reading selection at the sixth grade level, the learner will correctly answer a series of multiple choice questions relating to the sequence of events or ideas presented in the selection.

14. 27.2 Given a reading selection at the sixth grade level, the learner will choose from a series of sentences that sentence which best describes how a given character feels in a story.

15. 28.1 Given a reading selection at the sixth grade level, the learner will choose from a series of sentences the one which best describes a motive for some action or activity.

16. 29.1 Given a reading selection at the sixth grade level, the learner will correctly match a series of causes with a corresponding series of effects.

17. 29.4 Given a reading selection at the sixth grade level, the learner will answer correctly a series of multiple choice questions relating to meanings, generalizations, or conclusions not expressed in the selection itself.

18. 31.1 Given a locational question, the learner will choose from a series of reference sources where that item will be found.

19. 31.2 Given a locational question about newspapers, the learner will select the section where he would find the answer.

20. 32.1 Given a reading selection at the sixth grade level with the conclusion of the story deleted, the learner will select from a series of possible conclusions the one most appropriate to the selection.

APPENDIX C

PREPRIMARY PERFORMANCE OBJECTIVES
MEASURED IN THE 1975-76
MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM

Affective Objectives

Social Relationships

Widen peer and adult relationships by demonstrating increased ability to play with one or more chilren and to relate to a larger group.

Behavior Response to Classroom Environment

Increased ability to independently begin, work through and continue an activity.

Psychomotor Objectives

Gross Motor Behavior

Muscle coordination and balance (e.g., will be able to hop three consecutive times using one foot).

Eye-foot muscle coordination and balance (e.g., will be able to kick a ten-inch ball without losing his balance or falling).

Leg coordination (e.g., will be able to skip or gallop, leading with the preferred foot).

Fine Motor Behavior

Digital coordination (e.g., by being able to place ten small one-half-inch beads on a lacing string).

Eye-hand coordination (e.g., given a ten-minute time limit, will be able to put together a simple puzzle of five to eight pieces).

Thumb-finger coordination (e.g., given a pair of child's scissors and a strip of one-inch by six-inch construction paper, can make clean cut three times in five attempts without folding or tearing the paper).

Eye-hand coordination (e.g., given a large crayon and at least a two-inch model of a circle, will be able to copy the model in such a manner that the curved line closes).

Improved eye-hand coordination (e.g., given materials such as interlocking blocks or other available small blocks, will be able to build a stable eight-piece vertical structure or design).

Cognitive Objectives

Language Development

Produce pictures and/or scribbles of own creation which are used as a basis for communication.

Given an oral story which expresses a mood (e.g., happy, sad, angry, afraid), will identify the characteristic mood of the story.

Distinguish environmental sounds they hear (e.g., traffic sounds, dog barking, baby crying, etc.).

Given a sequence of pictures portraying a story, will tell about the story by responding appropriately to each picture.

Classification and Ord. ing

Given two kinds of objects in a large set (e.g., elbow and shell macaroni or bottle caps and checkers), will sort the objects into two sets according to their separate characteristics.

Given items of common qualities (e.g., texture, weight, loudness, speed, temperature, color), will group and match items on the basis of these qualities and be expected to know and use at least two of the comparative terms (e.g., soft-hard, loud-quiet, fast-slow, smooth-rough, hot-cold, dark-light, heavy-light) to identify the groupings.

Given a pattern using objects of two or more colors, will duplicate the pattern selecting from a set of similar objects.

Number - Numeration

Given a set of five pictures of objects of various heights, will arrange the pictures so that the objects are ordered from shortest to tallest.

Given an oral description of a set and a collection of objects, some which belong to the set and some of which do not, will pick up the objects that are members of the given set.

Given a set of objects with 1 to 9 members, will count the members of the set and state the cardinal number of that set.

Given a set of 2 to 8 objects, the student, from his own group of more than 8 objects will construct a set having more members than the original set.

Given a set of 2 to 8 objects, the student, from his own group of objects will construct a set having fewer members than the original set.

Spatial Relations

Identify and name the following parts of the body: head, arms, hands, torso, legs and feet.

Natural Sciences

Given an object to examine using their senses of sight, sound, smell, taste, and touch, will exhibit the ability to describe certain characteristics (such as size, color, weight, texture, temperature, odor, etc.).

Given an object or picture which changes with successive observations, will state at least one of the properties which is changing (e.g., the student tastes a sample of unbaked cookie dough and a sample of a cookie made from the same dough and describes what changed in the baking; hardness, texture, color, taste, smell).

Fine Arts

Distinguish between two-and three-dimensional forms.

Create music on a variety of classroom instruments.

Repeat a very simple rhythm, individually or in a group (e.g., singing, chanting, speaking, clapping, using rhythm instruments).

Participate with a group in singing simple, familiar melodies.

Distinguish between long and short tones.

Upon hearing music, will recognize whether a melody moves up or down.

Upon hearing music, will recognize fast and slow tempos.

APPENDIX D

MATHEMATICS OBJECTIVES
MEASURED IN THE 1975-76
GRADE 10 LIMITED PILOT PROJECT

1.	AR-II-D-19	Determine the quotient for a two-, three-, or four-digit dividend and a two-digit divisor - with or without remainders.
2.	AR-II-D-20	Given a problem involving division of whole numbers, the learner will determine the dividend, divisor and solve for the quotient and the remainder.
3.	AR-III-A-22	Given a fraction the learner will write a set of equivalent fractions with or without the use of fractional cut-outs.
4.	AR-III-A-23	Given the fractional numbers 1/2, 1/3, and 1/4 the learner will write them in order from the least to greatest, with or without the use of fractional cut-outs or numberline.
5.	AR-III-A-24	Given two fractional numbers with unlike denominators, the learner will tell which one is greater (denominators of 2, 3, 4, 6 or 8) with or without the use of aids.
6.	AR-III-B-10	Given two (proper) fractional numbers with unlike denominators of 2, 4, and 8 - or 2, 3, and 6 - the learner will write the sum.
7.	AR-III-B-11	Given two mixed numbers with unlike denominators of 2, 4, and 8 - or 2, 3, and 6 - the learner will write the sum, with or without the use of fractional parts.
8.	AR-III-B-12	Given two mixed numbers with like or unlike denominators of 2, 3, and 6 - or 2, 4, and 8 - the learner will find the sum, with or without the use of aids.
9.	AR-III-C-10	Given two fractions with unlike denominators of 2, 3 and 6 - or 2, 4, and 8 - the learner will subtract with or without the use of aids.
10.	AR-III-C-11	Given two mixed numbers with unlike denominators of 2, 3, and 6 - or 2, 4, and 8 - where no regrouping is necessary, the learner will find the difference.
11.	AR-III-C-12	Given two mixed numbers with unlike denominators of 2, 3, and 6 - or 2, 4, and 8 - the learner will find the difference.
12.	AR-III-D-6	Given two (proper) fractions with denominators less than 7, the learner will compute the product.
13.	AR-III-D-8	Given a whole number less than 5 and a proper fraction with denominator less than 7, the learner will compute the product.

14. AR-III-D-9 Given a whole number less than 5 and mixed number less than 5 and a denominator less than 7, the learner will compute the product.

15. AR-III-D-10 Given verbal problems involving fractional numbers, the learner will:
a) identify the necessary operation to be used,
b) write an arithmetic sentence for the situation,
c) determine the desired result.

16. AR-IV-A-8 Given a numeral with no more than three decimal places, the learner will round to the nearest whole number, tenths or hundredths as requested.

17. AR-IV-A-10 Given a common fraction whose decimal equivalent terminates in three (3) places or less, the learner will rename the common fraction as a decimal fraction.

18. AR-IV-A-11 Given a set of decimal fractions of no more than three (3) places, the learner will arrange the fractions in order from greatest to least or least to greatest as instructed.

19. AR-IV-C-7 Given two two-place decimal fractions both less than 1, the learner will convert both decimal fractions to their common fraction form (with denominators of 100), multiply the fractions and write the product in its decimal form and find the product.

20. AR-IV-C-8 Given a decimal fraction and a whole number of 10 or a power of 10 (100, 1000, and so on), the learner will find the value of the decimal number by placing the decimal point in the appropriate place value position.

21. AR-IV-C-10 Given two one-place decimal fractions greater than 1, but less than 100, the learner will compute the product.

22. AR-IV-C-11a Given two two-place decimal fractions greater than 1, but less than 100, the learner will estimate the product.

23. AR-IV-C-11b Given two two-place decimal fractions greater than 1, but less than 100, the learner will compute the product.

24. AR-IV-D-4 Given a division exercise of the form decimal number ÷ decimal number (up to four digits divided by up to two digits), the learner will change the divisor to a whole number by multiplying both divisor and dividend by the same number (10, 100, 1,000 and so on).

25. AR-IV-D-6 Given any two decimal numbers (up to four digits divided by up to two digits), the learner will find the quotient.

26. AR-V-1 Given a set of integers and a numberline, the learner can locate the integers by pointing at the correct location on a numberline. (Using either a horizontal or vertical number line.)

27. AR-V-2 — Given two integers, the learner can correctly name the sum of any two integers.

28. AR-VI-19 — Given sets of objects paired in a (a) one-to-one, (b) many-to-one, or (c) one-to-many ratio and part of another pair, the learner will complete that pair to maintain the pattern.

29. AR-VI-20 — Given a picture of two sets or a subdivided region, the learner will write a ratio describing the indicated comparison.

30. AR-VI-25 — Given a table of more than two equivalent ratios with (a) one value missing or (b) more than one value missing, the learner will complete the table.

31. AR-VI-32 — Given a written statement involving proportionality, the learner will write equivalent ratios by supplying the missing whole number.

32. AR-VI-33 — Given a fraction and a "hundred square," the learner will shade the appropriate area to represent the equivalent fraction and name the whole number percent involved.

33. AR-VI-35 — Given a partially completed table involving fractions with denominators of multiples of two and five, decimals and percents, the learner will complete the tables.

34. AR-VI-37 — Given a whole number percent and a number, the learner will determine that percentage of the given number.

35. AR-VI-38 — Given a simple written problem involving finding a percentage of a number, the learner will solve it.

36. M-I-A-14 — Given rulers specially scaled in 1/16", 1/10", 1 cm. or 1 mm. the learner will measure objects to the nearest unit as requested.

37. M-I-A-17 — Given a meter stick for conversion, the learner will state the relationships among meter, centimeter, and millimeter, and convert among the units.

38. M-I-A-18 — Given the following figures, the learner will find the perimeter of:
1) A rectangle (lengths of sides indicated) - formula may or may not be given.
2) A general polygon (lengths indicated).
3) A circle (diameter or radius indicated - formula and value of π provided).

39. M-I-A-20 — Given a length, expressed entirely in terms of one unit, the learner will multiply or divide the length by a whole number.

40. M-I-A-21 — Given word problems involving standard units of measure, the learner will solve the problems with or without aids.

41. M-I-A-24 — Given a map with coordinates, the learner will locate places designated by pairs of coordinates.

42. M-I-A-25 Given a map, the learner will determine the straight-line distance between 2 points, using a ruler and the map scale.

43. M-I-A-26 Given a table of data in common use, the learner will be able to locate items in the table.

44. M-I-B-11 Given a rectangle (formula to be known), the learner will measure to the nearest whole unit and use the formula to find its area.

45. M-I-B-12 Given a triangle (formula to be supplied), the learner will measure it to the nearest unit and find its area.

46. M-I-B-14 Given a circle, the learner will approximate its area by covering the region with a grid.

47. M-I-B-16 Given word problems involving areas of rectangles (square included), triangles, and circles and the formulas for the triangle and circle (also the value of π), the learner will solve them.

48. M-II-A-13 Given two times to the nearest half hour, the learner will find the time interval.

49. M-II-B-10 Given a list of items with their price, the learner will select those items he could buy with a certain amount of money.

50. M-II-B-11 Given an expressed amount of money, the learner will multiply or divide the given amount by a positive integer.

51. M-II-B-12 Given $100 and purchases totaling $100 or less, the learner will make change for the $100.

52. G-I-A-5 Given a square, a rectangle, a parallelogram and a triangle, the learner will describe the properties of each.

53. G-I-A-6 Given a circle and its related parts, the learner will identify the center, radius, diameter, semicircle and circumference.

54. G-I-C-1 Given pairs of congruent and non-congruent line segments or angles, the learner will be able to identify them as congruent or not congruent.

55. G-I-C-2 Given pairs of congruent and non-congruent triangles or polygons, the learner will identify them as congruent or not congruent.

56. G-I-D-2 Given a variety of symmetrical plane figures, the learner will identify lines and points of symmetry in each figure.

57. A-11 Given an equation involving addition, subtraction, multiplication, or division of whole numbers and involving a variable, the learner will find the value of the variable.

58. A-13 Given a linear equation of the form $ax \pm b = c$, where a, b, c, and x are whole numbers, and the solution is a whole number, the learner will be able to find the solution.

59. A-17 An expression of the form r^n, r is a whole number and n is 2, 3, or 4, the learner will write r^n as r. r. r...r (n factors).

60. A-22 Given a formula relating two quantities, the learner will make a table and describe how changing one quantity affects the other.

61. A-24 Given a common algebraic expression representing area, volume, etc., of degree ≤ 2 and the value for each of the variables, the learner will evaluate the expression.

62. A-25 Given a formula and values for all the variables except one, the learner will find the missing value provided that the given values and solution are whole numbers.

63. A-27 Given a square root table, the learner will be able to find the square route of a specified whole number ≤ 100.

64. A-30 Given a table of values representing a linear relation, the learner will graph the straight line.

65. P-12 Given a bar graph, the learner will be able to answer questions comparing the data.

66. P-14 Given a line graph, the learner will be able to answer questions comparing data.

67. P-15 Given a probabilistic situation, the learner will know that an event can be assigned a numerical probability between 0 to 1, inclusive, and will indicate appropriate probabilities for selected events.

68. P-17 Given an experiment in probability with all events equally likely, the learner will find the probability of a designated simple event.

69. P-19 Given the results of an experiment performed a given number of times, the learner will predict the number of times a particular event will occur if the experiment is performed many times.

70. P-21 Given a set of up to 30 whole numbers, the learner will find the mean (average).

71. P-22 Given a set of up to 30 whole numbers, the learner will be able to find the median (middle score).

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* These performance objectives were selected for potential use in the Tenth Grade Educational Assessment Program.

READING OBJECTIVES
MEASURED IN THE 1975-76
GRADE 10 LIMITED PILOT PROJECT

1.	34.	Learners will be able to apply strategies that help them to recognize words in the context of a passage.
2.	35.1	Learners will be able to determine meaning from the context of the passage.
3.	35.2	Learners will be able to apply knowledge of roots and affixes as an aid in understanding words.
4.	35.3	Learners will be able to read specialized words related to everyday functions (e.g., highway signs and symbols, recipes, test instructions, typical institutional forms).
5.	36.1	Learners will be able to tell in their own words, orally or in writing, the major incidents as they occur in a reading passage.
6.	36.2	Learners will be able to select from a series of sentences the one best describing the content of a reading passage.
7.	36.3	Learners will be able to select passages within a reading selection showing causation.
8.	36.4	Learners will be able to select passages within a reading selection showing characterization.
9.	36.5	Learners will be able to select passages within a reading selection showing mood or feeling.
10.	36.6	Learners will be able to choose from three possible conclusions the one best suited to end a reading selection wherein the conclusion has been omitted.
11.	37.1-37.2	Learners will be able to select from a number of reading selections those meant to entertain, to persuade, to provide information, to influence the reader's opinion.
12.	37.3	Learners will be able to select from a number of reading passages those appealing to the reader's personal needs, goals, prejudices, and fears.
13.	38.1	Learners will be able to select from a number of phrases the one most appropriate as a title to a topical poster (or still photo, or musical selection).
14.	38.2	Learners will be able to choose from a series of captions the one best suited to a cartoon.

15. 39.1 Learners will be able to identify various literary types, subject matter categories, individual selections, authors.

16. 39.2 Learners will be able to discuss the purposes for which people read various types of reading material.

17. 40.1 Learners will be able to alphabetize randomly chosen words.

18. 40.4 Learners will be able to scan sub-headings and relate the general nature of the contents of the material.

19. 40.5 Learners will be able to skim through the items in a given categorical listing to locate the one specified.

20. 41. Learners will be able to use graphs, charts, tables, maps, simple operating instructions, forms, etc.

APPENDIX E

SELECTED PROGRAM PUBLICATIONS

1971-72 Assessment Publications

Published Reports

Objectives and Procedures of the Michigan Educational Assessment Program 1971-72. Lansing, Michigan: Michigan Department of Education, October, 1971. (The first report of the 1971-72 Michigan Educational Assessment Program.)

Individual Pupil Report: Explanatory Materials. Lansing, Michigan: Michigan Department of Education, April, 1972. (The second report of the 1971-72 Michigan Educational Assessment Program.)

Local District and School Report: Explanatory Materials. Lansing, Michigan: Michigan Department of Education, May, 1972. (The third report of the 1971-72 Michigan Educational Assessment Program.)

Local District Results. Lansing, Michigan: Michigan Department of Education, September, 1972. (The fourth report of the 1971-72 Michigan Educational Assessment Program.)

Technical Report. Lansing, Michigan: Michigan Department of Education, November, 1972. (The fifth report of the 1971-72 Michigan Educational Assessment Program.)

Related Publications

Test Analysis, Michigan Assessment of the Basic Skills, Grade 4, Form UMT. Princeton: Educational Testing Service, April, 1972 (SR-72-22).

Test Analysis, Michigan Assessment of the Basic Skills, Grade 7, Form UMT. Princeton: Educational Testing Service, April, 1972 (SR-72-21).

1971-72 Norm Tables: Norms listed are available for Grade 4 and Grade 7

Pupil Score Norms: State

School Mean Norms: State, plus 5 community types

District Mean Norms: State, plus 5 community types

1972-73 Assessment Publications

Published Reports

Objectives and Procedures. Lansing, Michigan: Michigan Department of Education, October, 1972. (The first report of the 1972-73 Michigan Educational Assessment Program.)

Individual Pupil Report: Explanatory Materials. Lansing, Michigan: Michigan Department of Education, March, 1973. (The second report of the 1972-73 Michigan Educational Assessment Program.)

Local District and School Report: Explanatory Materials. Lansing, Michigan: Michigan Department of Education, March, 1973. (The third report of the 1972-73 Michigan Educational Assessment Program.)

Technical Report. Lansing, Michigan: Michigan Department of Education, March, 1974. (The fifth report of the 1972-73 Michigan Educational Assessment Program.)

Related Publications

Test Analysis, Michigan Assessment of Basic Skills, Grade 4, Form VMT. Princeton: Educational Testing Service, May, 1973 (SR-73-48).

Test Analysis, Michigan Assessment of Basic Skills, Grade 7, Form VMT. Princeton: Educational Testing Service, May, 1973 (SR-73-48).

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Pupil Score Norms: State

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